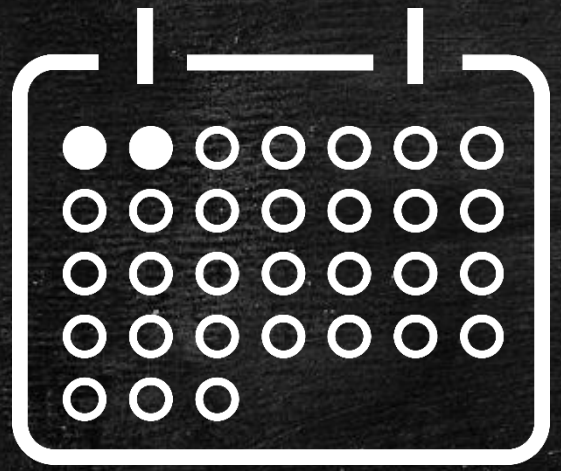
# COVID-19 School Funding and Energy Efficiency Opportunities

# Today's agenda

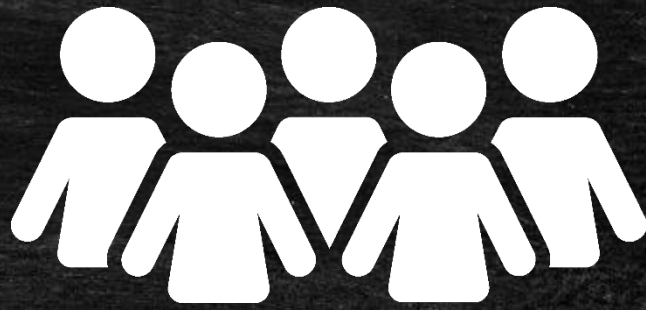
- The opportunity
- Why we are having this discussion
- What are the sources of funding, relevant uses and timing
- Measures
- Questions
- Next steps

# Background



Over the past 12 months, Congress has allocated just under $200 billion to provide support to schools during the COVID-19 pandemic.

The first wave of money was spent on PPE and remote learning tools which were more focused on the short term.



The last two packages are focused on bringing students back to school safely and include both short and long term opportunities.

# An overview of the K-12 funding packages

## March 2020

**$17B Cares Act (ESSERI)**

- Focused on infrastructure for remote learning.
- Deadline to spend: **September 30, 2022.**

## December 2020

**$54B American Response and Relief Bill (CRRSA)(ESSERII)**

- Focused on in-school support (PPE, cleaning, and HVAC projects).
- Funds were recently allocated to the states.
- The BPA Engineering team has documented these allocations for ID, MT, NV, OR, UT , WA, and WY.
- Deadline to spend: **September 30, 2023.**

## March 2021

**$122B American Rescue Plan (ARP)**

- Focused on in-school support with an emphasis on HVAC and infrastructure.
- Awaiting information on allocations by state.
- Deadline to spend: **September 30, 2024.**

# Why is this important for utilities?

- Opportunity to support energy efficiency in the schools
- Improves school facilities for better learning environment in their communities
- Cuts future operating costs for schools which benefits the utilities customers
- Provides opportunity for the utility to support their local community and their customers

# Example EE projects in schools

## United Electric Co-Op and the Minidoka County School District

Replaced a 30 year old electric boiler with a water loop serving water to air heat pumps in each classroom with a variable refrigerant flow system (VRF) which uses the existing dedicated outside air supply system to bring in outside air, important in our new COVID-19 world.

**Energy savings are 138,400 kWh per year.**

## Stevenson-Carson School District in Skamania PUD Territory

All-electric heat and pneumatic controls, were upgraded to direct digital controls and demand-controlled ventilation.

**Whole building savings are 250,000 kWh/year.**

## Columbia Power Cooperative Elementary School in Monument, OR

Installed new DHPs and a Dedicated Outside Air System (DOAS). NEEA provided funding for the VHE DOAS equipment and design services. Several teachers commented on how wonderful it was to have fresh air in the classrooms.

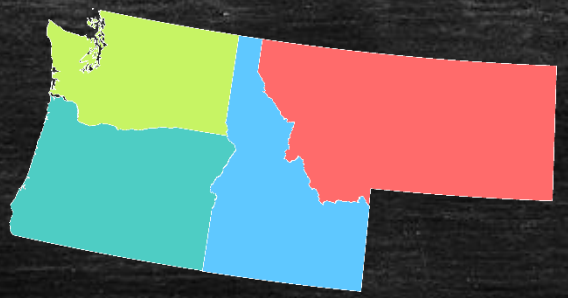
**The new system saves the school ~$3000 annually.**

# Following the money

## Federal level

Funding for these programs were allocated by using Title 1 funding allocations.

- No Federal requirements for states to receive the funding outside of the spending deadlines:
  - No required matches for funds.
  - No application process.

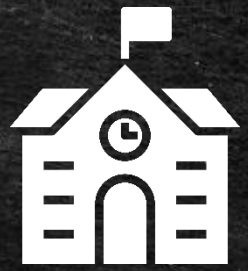


## State level

Funds are allocated to the states which distribute funds to school districts.

Each state has different rules and processes for tracking the funding. For example,

- Oregon requires that all capital improvements be approved by their DOE.



## School districts

Money is allocated for the individual schools.

BPA has developed estimates for funding allocations across school districts within the BPA utility territory.

# Available stimulus funding

| State | Number of utilities and school districts in BPA region | December 2020 package (Available funding for BPA customer school districts) | March 2021 package (State level funding only) |
|---|---|---|---|
| **Idaho** | 17 Utilities and 46 School Districts | $43 M | $440 M |
| **Montana** | 10 Utilities and 98 Schools | $40 M | $382 M |
| **Nevada** | 3 Utilities and 2 School Districts | $6 M | $1 B |
| **Oregon** | 35 Utilities and 91 School Districts | $145 M | $1.1 B |
| **Utah** | 2 Utilities and 2 School Districts | $1 M | $615 M |
| **Washington** | 40 Utilities and 167 School Districts | $380 M | $1.9 B |
| **Wyoming** | 1 Utility and 2 School Districts | $10 M | $304 M |

# Projects eligible for COVID school funds

The COVID School fund support a number of improvement areas including:  PPE, loss of learning, additional teachers/staff, etc.

Two improvements directly support  Energy Efficiency:

- HVAC and indoor air quality upgrades.
- School facility or building envelope upgrades (for example, new windows or doors).

Although the total amount of funding is significant, by the time the funding is distributed to the states, then to the districts and finally to individual schools, the total dollars available for individual schools may be limited and not enough to support HVAC improvements.

Given the number of competing priorities, it is uncertain how many schools will opt for HVAC improvements or facility upgrades.

# Possible energy efficiency improvements

# ASHRAE & CDC recommendations for improved Indoor Air Quality

## CORE RECOMMENDATIONS

### ENERGY INCREASE

- Maintain or increase outside air ventilation rates per ASHRAE 62.1 minimum
- Upgrade filtration to MERV 13 or better (also effective for wildfire smoke)
- Pre / Post occupancy flush – 3 air changes of outside air
- Temporarily disable demand control ventilation (DCV)

## OPTIONAL MEASURES

### ENERGY SAVINGS

- Dedicated outdoor air systems (DOAS)
- High efficiency heat / energy recovery ventilators (HRV / ERV)

### ENERGY INCREASE

- Ultraviolet germicidal lamps (UV-C)
- Control humidity 40%-50% RH

# EE Projects – Small Schools

## OPTIONS

- Replace baseboard heating with efficient packaged heat pumps (roof or pad-mount)
- Replace older packaged rooftop HVAC units with efficient heat pumps and OSA control
- Install web-connected programmable thermostats
- Install heat recovery ventilators (HRV)
- Install individual or multi-zone ductless heat pump system

# EE Projects – Large Schools

## OPTIONS

- DDC Controls upgrade to replace existing pneumatic controls, scheduling & optimal start-stop
- Variable Air Volume (VAV) control upgrades: fan pressure optimization, supply air temperature reset, ventilation optimization, optimal start-stop, install fan variable speed drives
- Install variable speed drives on existing air-handling units
- Replace aging rooftop packaged equipment with high efficiency heat pumps
- Very high efficiency (VHE) dedicated outdoor air system (DOAS) with 85% energy recovery and increased outside air volume, with MERV 13 or 14 filtration
- Variable refrigerant flow (VRF) system

# EE Projects – New Construction / Renovation

## OPTIONS

- Displacement ventilation air distribution system (low fan energy, limits contaminant dispersal)
- Very high efficiency (VHE) dedicated outdoor air system (DOAS) with 85% energy recovery and increased outside air volume, with MERV 13 or 14 filtration
- Variable refrigerant flow (VRF) system
- Air-water heat pump with radiant floor slab heating / cooling (for smaller schools)
- Upgrade building envelope insulation and glazing above-code

# Here's how to work with BPA

1. BPA is compiling information from the state on school districts receiving ESSER and ARP funds which the EERs will share with utilities.

2. BPA encourages utilities to contact school districts receiving funds to see if they are investing in HVAC or building envelope measures.

3. If the school districts are investing in these projects and the utility wants to support them, please contact your BPA EERs and Customer Service Engineer (CSE).

4. The BPA CSE will work with the utility to coordinate contacting the schools to better understand the projects and discuss next steps.

# Trade Ally Network NW Support

## Trade Talk NW e-Blast (5/25)

- CRSSA funding available by state
- HVAC Tech Tip: Indoor air quality in schools
- Lighting Tech Tip: Controls in school settings
- Sales Skill: Working with school districts

## Network Collaboration

- Field Support
- Engaging Trade Allies

# Next steps

1. BPA to gather school district allocations for March 2021 funding package.
2. BPA energy efficiency representatives share school district allocations with customers.
3. BPA supports utilities in working with school districts on EE projects, helping to leverage opportunities to combine EEI dollars and COVID funding.

# More information about improved indoor air quality

- Guidance for the Re-opening of Schools
- Core Recommendations for Reducing Airborne Infectious Aerosol Exposure
- AHSRAE Guidance for Re-opening Schools and Universities
- Role HVAC Systems Might Play with Respect to the COVID Pandemic

# More Information about school funding

- Idaho
- Montana
- Nevada
- Oregon
- Utah
- Washington
- Wyoming

# Thank you

## Questions & comments?

Please contact your Energy Efficiency Representatives (EER) and Customer Service Engineers (CSE) for more information.